sington Workhouse, and, from the style and colouring of the isometrical view, I should pronounce it to be by the same authors.

Manchester. SCRUTATOR.

THE NEWBURY SAVINGS BANK COMPETITION.

The successful competitor for the Newbury Bank is Mr. George Truefitt: his designs, which we have not seen, are in the Tudor style, to be of red brick with stone dressings. The building will stand in the centre of the market-place.

DR. REID'S EXTINGUISHER.

SIR,—Dr. Reid's idea of extinguishing a fire on board ship by the use of carbonic acid gas has an exceedingly plausible appearance, but the practical difficulties attending its application will, it seems to me, disqualify it from its intended useful purpose. Every one is aware that carbonic acid gas is as antagonistic to combustion as it is to life—that a flame immersed in it is instantly extinguished. It is with these elementary chemical principles in view that Dr. Reid proposes carbonic acid gas to extinguish fire, and to generate the gas by an admixture of chalk and sulphuric acid. 5 tons of the former and a proportionate quantity of the vitriol he says would, in a few minutes, generate a sufficient quantity of gas for a vessel of 1,000 tons burden. All this is perfect enough in theory. It is just in the application where the difficulty lies. Every body knows the theory of ventilation; and it does not require any great scientific knowledge to demonstrate *on paper* how *perfect* combustion in a furnace may be produced; yet the atmosphere of our public assemblies is as vitiated as ever, and black smoke still issues from the chimneys of our manufactories.

Every ton of timber of the burning ship should generate upwards of 60,000 cubic feet of carbonic acid gas. This is enough in all conscience, without the aid of chalk and vitriol, to check the fire, if it could be made applicable to that purpose.

Complete combustion generating carbonic acid gas is only effected when oxygen combines with carbon in the proportion (in weight) of 16 to 6; if it mixes in the proportion of 8 to 6 the result is carbonic oxide. If it mixes in less proportions a large quantity of carbon passes off in the form of smoke; a small portion of atmospheric air is, however, sufficient to keep alive combustion, and this I think would prove fatal to Dr. Reid's plan. For, unless he excludes the atmospheric air, the mere injection of carbonic acid gas would be of no avail, and if the external air be excluded the fire itself would generate sufficient gas to extinguish the flames.

WILLIAM DREDGE.

ON THE INCLINATION OF ROOFS.

THE inclination of roofs in general ought to be regulated, as students know, by the nature of the climate in which the building is to be erected. Thus, for example, the slope of a roof given to a building erected in a northern climate, should be greater than the slope or pitch of a roof given to a building in a climate where snow is unknown. The ancient Egyptians, Babylonians, Persians, and other eastern nations are well known to have made their roofs quite flat: the same custom also prevailed amongst the Jews.

The reason and origin of this custom may easily be perceived, if we bear in mind, that amongst these nations the roof of the house was considered as the most important part of the structure, and greatly contributed to the comfort of the occupiers: it was also used by them as a place of secrecy and retirement, on which, after the turmoil of their daily avocations, they enjoyed the cool evening breezes. As such an application is not obtained amongst us, it is obvious that their example cannot form any argument for the justification of those of our architects who, from a desire to hide the roof,—a desire certainly founded upon a false taste,—make it as flat as possible.

It appears that the Greeks were the first people who departed from the ancient custom of making the roof quite flat, and introduced the custom of making the roof slope each way from the middle to either side, in the same manner as our common pent roofs; still the inclination was small, the height of the ridge above the level of the walls varying from 1-7th to 1-9th of the span, or in other words, from twelve to sixteen degrees; nevertheless, judging from examples left us, a conclusion is easily come to, that although they gave their roofs a trifling incline suited to the climate, it was more for ornamenting this part of the building than otherwise. The Romans gave a greater pitch to their roofs than the Greeks, as in the pediments of their buildings, it will be generally found, they make an angle of about twenty-four degrees. This inclination was well suited to the mild climate of South Europe; but in northern climates, which are so changeable, and subject to heavy falls of snow and rain, it was desirable the inclination should be greater.

Our Gothic ancestors, seemingly aware of this, took care to construct their roofs with a very considerable pitch. Instead of anticipating the taste of our age in the construction of low-pitched roofs, in order to conceal them as much as possible, they were made the most conspicuous part of the building: first, by raising them to a great height; secondly, by constructing them in many various and fantastic shapes; and, thirdly, by perforating them with highly ornamented windows.

In most of our old English buildings, the equilateral triangle seems to have been considered the standard of reference. This remark applies to both public and private edifices. The pitch of about forty-eight degrees continued to be the standard for some time, and was dignified with the title of "true pitch:" subsequently this was abandoned, and the square, or a pitch of forty-five degrees preferred. There are advantages connected with a low pitch roof as well as with the high pitch: economy certainly belongs to the former, a consideration for which is so very prevalent at the present time in our building operations.

G. J. RHODES.

PRACTICAL GEOMETRY AT THE LONDON MECHANICS' INSTITUTION.

ON Tuesday evening in last week, after Mr. J. S. Hallersley had delivered an introductory lecture on the science of Practical Geometry, illustrating the same by models and drawings, Mr. Joseph Ash was elected hon. secretary, and Mr. H. Friend, the retiring secretary, presented a testimonial from the late class to the lecturer (in the shape of a marble and bronze inkstand), with the thanks of the class for the manner in which he had taught them geometry. The speaker justly asked what is a practical man without a knowledge of geometry? as long as he remains ignorant of this science, he is under the control of another in his own sphere of a superior class. For what mechanical profession is there that has not this science for its base? could the engineer construct his engine or his railway, the architect his building, or the mariner his ship, without this science? Nor did it stop here: it gave elegance to the mansion, and strength to the fortress, and they were convinced that geometry formed the principal base of all mechanical arts, and would advise all so situated to study it, not only by books, but practically.

It was afterwards proposed that a geometrical library be established, and a subscription was opened at once for the purpose.

We have lately received from several members of mechanics' institutions a recognition of our earnest though humble endeavours to raise the character of artisans, which is very gratifying to us.

THE CITY.—Mosaic pavement and other Roman remains have been falsely said to have again turned up in Thames-street.——Preparations are being made in the Tower for the erection of a granite statue of the Duke of Wellington.——The decoration of the apartments at Lloyd's, in the Royal Exchange, left unfinished till now, has been at length executed; under the eye of their architect, Mr. Tite, by men from Mr. Sheriff Cubitt's establishment. Imitations of marble, granite, porphyry, &c. and some gilding constitute the principal ornamentation.

DECORATION OF PUBLIC ROOMS.

MISS LINWOOD'S gallery in Leicester-square, late the *Walhalla*, has been decorated for a public drawing room with very considerable success, by Mr. Hurwitz, of Brydges-street. There is an elegance about the whole which we were scarcely prepared for.

The ceiling is decorated in compartments, formed by a representation of panels and soffits of girders, the panels being filled in with an open pattern decoration with a blue background to represent the sky. The soffits or beams are in gold relief, and colours in lines, and etched with gold, and the mitres or intersections are covered with very nice medallions, in stone relief, heightened with gold. The centre of the ceiling has a large circular panel, filled in with a blended sky ground to form a dome, with garlands round it, the spandrils of the garlands being filled in with cupids: from the centre of this panel is suspended a glass chandelier. Two large intervening panels between this and the ends of the room are filled in with allegorical subjects and cupids.

The walls are divided into panels by pilasters, the ground being a tinted satin, and the pilasters, cornice, &c., are in colours relieved with gold: the panels are filled in with flowers, from which again are suspended medallions. The arrangement of the orchestra, gallery, &c., is clever.

Laurent's Casino, in the Adelaide Gallery, is also exceedingly well fitted up, and shews a great advance over the mode of decorating similar places which prevailed in England only a few years ago.

THE BRISTOL ARCHITECTURAL SOCIETY.

THE ANCIENT CROSS AND NEW FOUNTAIN.

A MEETING of this society was held on the 18th inst., when the Venerable Archdeacon Thorpe presided, and addressed the meeting at some length. He particularly alluded to the last year's report, just published, which contains an account of St. Michael's Church, Othery, and some excellent illustrations of the curious ancient altar frontal connected with this church.

The Rev. J. E. Carter, the honorary secretary, having read a list of donations, &c., Mr. Winston read a paper upon glass painting.

The Mayor of Bristol observed that there was a proposition to build a high cross in the College-green, but the plan was not yet determined upon, and as that was an architectural society, he thought it desirable to ascertain from them what was the best material for making it. There was a person at Ipswich who had taken out a patent for an article which would stand comparison with carved stone in appearance, was more durable, and was cheaper.

The Archdeacon said that however valuable the invention alluded to might be, he was not disposed to think it equal to carved stone. He preferred the chisel of the sculptor, and the hand of the carver, to anything which could be accomplished by mechanical pressure.

From a conversation which followed, wherein Mr. Garrard took part, it appeared that it was not yet determined whether to erect a cross or a fountain, or both: that the old cross is too dilapidated to be restored, but that there are accurate drawings of it to reconstruct it.

A WINTER GARDEN AT VAUXHALL.—It is proposed to transform Vauxhall into a winter garden. It is said that the four long avenues which form the large quadrangle at present, are to be increased about 20 feet, that is, 10 feet on either side. The roof of this pathway is to be raised a considerable height, and the whole of it is to be inclosed by means of a panorama of the overland route to India. This is to commence with Marseilles, then are to follow Malta, Alexandria, and all the principal points in the journey. These walks will lead directly to the Waterloo ground, which is to be covered in and converted into a hippodrome, where are to appear all the splendours of the chariot race, and other performances. To the right of the hippodrome there will be constructed a large conservatory, to form a very agreeable promenade, and gas is to simulate the sun.

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